

**IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION**

EDGE CAPTURE L.L.C., and EDGE  
SPECIALISTS, L.L.C.,

Plaintiffs,

V.

BARCLAYS BANK PLC, BARCLAYS CAPITAL  
INC., UBS AG, UBS FINANCIAL SERVICES,  
INC., UBS SECURITIES, L.L.C., WOLVERINE  
TRADING, L.L.C., AND WOLVERINE  
EXECUTION SERVICES, L.L.C.,

Defendants.

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Civil Action No. 09 CV 1521

Judge Charles R. Norgle, Sr.

Magistrate Judge Denlow

**REPLY MEMORANDUM IN SUPPORT OF THE BARCLAYS AND UBS  
DEFENDANTS' RENEWED MOTION TO DISMISS THE AMENDED COMPLAINT**

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**STATUTES**

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## **I. INTRODUCTION**

Edge's opposition confirms that its patents are invalid under 35 U.S.C. § 101, and the Amended Complaint should accordingly be dismissed:

- *First*, despite Edge's arguments to the contrary, Edge's system claims are not "machines" under § 101. The patents make clear that the purported structure in the system claims is not structure at all, but instead software operating on stored data. Recent Patent Office decisions confirm that such claims are unpatentable and invalid.
- *Second*, Edge's system and method claims are indistinguishable, and all claim the same abstract idea of comparing market prices to desired trade values in deciding whether to make a trade, as traders and trading systems have done for decades. Such an abstract idea is unpatentable and invalid under the Supreme Court's decisions in *Bilski*, *Benson*, *Flook* and *Diehr*. Edge nevertheless seeks to recast its claimed invention, impermissibly importing concepts such as "low-overhead designs," "fully-automated trading," and "no human intervention" from its patents' specification into the claims, which do not recite these terms. These concepts are, however, even more abstract than the claimed steps and fail to make these claims patentable. Edge's suggestion that the Patent Office properly granted the claims here is misplaced, as the claims were issued using an overruled standard, and Edge's claims are invalid under the applicable standard.
- *Finally*, Edge inappropriately dismisses the machine-or-transformation test, which the Supreme Court made clear should continue to be used. Edge fails to refute Barclays and UBS's arguments and cannot credibly dispute that its claims fail this test and are invalid. In addition to claiming an abstract idea, Edge's claims (i) cannot be tied to any particular machine, as its patents merely disclose the use of a general purpose computer to perform the steps recited in the claims; and (ii) do not transform any physical article to another state or thing, merely operating on data and comparing prices with calculated values.

Accordingly, Barclays and UBS's motion to dismiss should be granted.

In addition, Edge concedes that its baseless indirect infringement claims are withdrawn; however, these claims remain in the Amended Complaint. If the Amended Complaint is not dismissed, these claims should be dismissed or, alternatively, removed by further amendment.

## **II. EDGE'S PATENTS ARE INVALID UNDER 35 U.S.C. § 101, AND EDGE'S ARGUMENTS TO THE CONTRARY ARE UNAVAILING**

### **A. The Court Can And Should Invalidate Edge's Claims Through This Motion**

Edge incorrectly argues that it is impermissible for Barclays and UBS to "seek a dismissal under Rule 12 on an affirmative defense that neither Barclays nor UBS has plead." D.E. 118 at 6. Numerous courts have, however, held that an affirmative defense may be raised in a motion to dismiss, particularly where, as here, the defense is apparent from the complaint itself or its exhibits. *Jones v. Bock*, 549 U.S. 199, 215 (2007) ("Whether a particular ground for opposing a claim may be the basis for dismissal for failure to state a claim depends on whether

the allegations in the complaint suffice to establish that ground, not on the nature of the ground in the abstract.”); *Muhammad v. Oliver*, 547 F.3d 874, 878 (7th Cir. 2008) (“No purpose would be served by compelling the defendant to file an answer rather than proceed by motion when the plaintiff has pleaded the answer himself.”). Patent invalidity is not treated any differently, and courts have invalidated patents through a motion to dismiss. *See, e.g., Select Controls v. Am. Elec. Components, Inc.*, No. 07-1306, 2008 WL 216612, at \*2-5 (S.D.N.Y. Jan. 22, 2008) (Invalidating patent through a motion to dismiss, based on “the Complaint and the exhibits attached thereto.”); *Cotapaxi Custom Design & Mfg., LLC v. Corporate Edge, Inc.*, No. 06-5183, 2007 WL 2908265, at \*4-6 (D.N.J. Oct. 1, 2007) (granting Rule 12(b)(6) motion as to infringement). This Court should do the same thing here.

**B. Edge’s System Claims Are Not Machines Under § 101, And Reside Solely In Software**

Edge incorrectly contends that its system claims fall within the “machine” category for patent eligible subject matter under 35 U.S.C. § 101, pointing to the Supreme Court’s definition of “machine” from *Diamond v. Diehr*, 450 U.S. 175 (1981). D.E. 118 at 7. While Edge correctly notes that the Supreme Court in *Diehr* stated that “[t]he term machine includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result,” *id.* (quoting *Diehr*, 450 U.S. at 182 n.7), Edge’s claimed invention here resides solely in *software*—not a mechanical device or combination of mechanical devices. In fact, the patents make clear that the “automated trading system” recited in each of the system claims “is preferably resident in [a] backend computer,” with “[t]he automated trading system *software* [running] in a text-based environment or a Windows or Windows-like environment.” Ex. 1 (’833 Patent), col. 7, ll. 31-33 (emphasis added);<sup>1</sup> *see also* Ex. 2 (’629 Patent), col. 9, ll. 14-18 (stating “the automated trading system may be run on an operating system, such as VMS, DOS, or LINUX, or in a WINDOWS or similar operating system, which is more user-friendly.”). The patents go on to state that any computer, circa 2000, using a “Pentium III 450 MHz CPU and 128 MB of RAM,” and running this software, is not only sufficient to practice the claimed invention, but also sufficient to reach the desired speeds for making automated trades. Ex. 1 (’833 Patent), col. 11, ll. 43-45; col. 15, ll. 15-17.

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<sup>1</sup> “Ex. \_\_\_” refers to the Exhibits attached to the Declaration and Reply Declaration of Jeffrey G. Randall.

Of course, software is not a mechanical device and alone does not fit within any category of patent eligibility under 35 U.S.C. § 101, as the Patent Office has made clear in numerous recent decisions issued since the Supreme Court decided *Bilski*:

A claim that recites no more than software, logic or a data structure (i.e., an abstraction) does not fall within any statutory category. *In re Warmerdam*, 33 F.3d 1354, 1361 (Fed. Cir. 1994). Significantly, “Abstract software code is an idea without physical embodiment.” *Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437, 449 (2007). The unpatentability of abstract ideas was confirmed by the U.S. Supreme Court in *Bilski v. Kappos* [130 S. Ct. 3218 (2010)].

*Ex parte Fellenstein*, No. 2009-006595, 2010 WL 2985341, at \*2 (B.P.A.I. July 27, 2010); *Ex parte Birger*, No. 2009-006556, 2010 WL 2800803, at \*2 (B.P.A.I. July 13, 2010) (same); *Ex parte Proudler*, No. 2009-006599, 2010 WL 2727840, at \*2 (B.P.A.I. July 8, 2010) (same).

**1. Edge’s Purported Structure Is Not Structure At All And Resides Solely In Software**

Edge attempts to justify its position by pointing to purported structure in its system claims, contending that “[t]he inventive machine in claim 1 of the ’629 patent incorporates ‘data reference logic’ and a ‘data structure’ to achieve the result of rapid trading.” D.E. 118 at 7. Such elements are not, however, mechanical or hardware components, and instead, reside solely in software, as the patents make clear. For example, the ’629 patent explains that the “data reference logic” is the portion of the software that merely compares pre-calculated values for desired transactions with current market price information, in order to make a decision as to make a trade in the ’629 patent. *See, e.g.*, Ex. 2 (’629 Patent), col. 3, ll. 5-32. According to the ’629 patent, the “data reference logic” performs this function by relying on the recited “data structure,” which in turn merely “maps pre-calculated transactions values of the first traded item over a range of price values for a second traded item” through “an n-dimensional data structure,” “a look-up table, a linked list, and/or a tree structure.” *See id.* These elements all reside within the software and merely involve the processing of data.

Edge similarly claims that “[t]he inventive machine in claim 1 of the ’833 patent includes something different, a ‘transaction value calculator,’ to achieve that [rapid trading] result.” D.E. 118 at 7. The recited “transaction value calculator” is not, however, some mechanical device or piece of equipment that transforms the claimed system into a “machine;” rather, it is the part of the software that “calculate[es] a theoretical value for [a] traded item in real time” (Ex. 1 (’833 Patent), col. 7, ll. 20-21), using well-known mathematical algorithms (*e.g.*, the Black-Scholes,



Cox-Rubenstein, Garman-Kohlhagen, and Implicit Finite Difference mathematical models, among others) implemented by the software. *Id.*, col. 11, l. 28 – col. 13, l. 31. This does not rise to the level of a “machine;” it is **software** that does not fall within any patent-eligible category under section 101, as the Patent Office has repeatedly held. *Fellenstein*, 2010 WL 2985341, \*2 (“A claim that recites no more than software, logic or a data structure (i.e., an abstraction) does not fall within any statutory category.”); *see also Birger*, 2010 WL 2800803, \*2 (same); *Proudler*, 2010 WL 2727840, \*2 (same).<sup>2</sup>

## 2. Recent Patent Office Decisions Confirm That Edge’s System Claims Are Not “Machines” Under § 101

Several recent Patent Office decisions, applying the Supreme Court’s *Bilski* decision, are instructive and further confirm that a claimed invention residing solely in software does not fit within any patent-eligible category, much less the machine category. For example, in *Ex parte Venkata*, No. 2009-007302, Slip. Op. (B.P.A.I. Oct. 6, 2010) (Ex. 11), the claimed invention related to a “service discovery system” that “receive[ed] requests in different format from a mobile user, gather[ed] and compile[d] results from multiple sources [and] subsequently transmit[ted] the results in a uniform format to the user,” using “service discovery agents” that issued the queries to mobile users “via an Internet host.” *Venkata*, Slip. Op. at 2-3 (Ex. 11). Claim 8 in *Venkata* was representative, and presented the claimed invention in “system” form, including “a first service discovery agent and a second service discovery agent” as elements. *Id.* at 7 (Ex. 11). The Patent Office concluded that this claim was not patentable:

[The] Specification indicates that the service discovery functions performed by the recited agents may be implemented in software, firmware, hardware or a combination thereof. Consequently, we find that the claimed agents comprised in the service discovery system **can exist solely in software**. Reciting descriptive material *per se* (e.g., **data structures** and **computer programs**), however, is **non-statutory**.

*Venkata*, Slip. Op. at 2-3 (Ex. 11) (emphasis added).

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<sup>2</sup> Even if the purported structure in Edge’s claims was hardware or some physical device, it is insufficient to convert Edge’s claimed invention into patent-eligible subject matter. *Every Penny Counts, Inc. v. Bank of America Corp.*, No. 07-42, 2009 U.S. Dist. LEXIS 53626, at \*6 (M.D. Fla. May 27, 2009) (“The ‘system’ described by the 191 patent ‘has no substantial practical application except in connection with’ computers, cash registers, and networks, but it is not comprised of those devices. The 191 patent is a process, not a machine.”); *Research Corp. Techs. v. Microsoft Corp.*, No. 01-CV-658, 2009 WL 2413623, at \*12, \*15-16 (D. Az. July 28, 2009) (“Simply because a digital apparatus such as a computer, calculator, or the like could assist with this comparison does not render it patent eligible material.”)

Similarly, in *Ex parte Dettinger*, No. 2009-006998, 2010 WL 3768179 (B.P.A.I. Sep. 24, 2010), the claimed invention related to a “data processing system” having a “first physical data structure,” “second physical data structure,” “conditional modifier,” and “query processor,” as the claimed system’s elements. The Patent Office concluded that the system claims reciting these features were unpatentable, as these features all resided in software:

System independent claims 1, 7 and 19 contain a nominal recitation of a data processing system in their preambles. Based upon the nature of the recited material in the body of these claims, which recite an abstract model and a query processor, ***no hardware or structure is to be imputed*** to the mere recitation of a data processing system. In view of the foregoing, it is clear that this feature is directed to a ***software-based data processing system per se***. The claimed query processor is reflective of the functionality associated with the query execution software component 160 in figure 1, in turn as reflected in flowchart form in figure 3. There is ***no recited hardware or structural element*** performing any functionality in the body of these system claims.

*Dettinger*, 2010 WL 3768179, \*4 (emphasis added).

In *Ex parte Choo*, No. 2009-6352, 2010 WL 2985362 (B.P.A.I. Jul. 28, 2010), the claimed invention related to a “computer system” that included a “database,” “kernel module,” and “security module” as its recited elements. The Patent Office held this claim unpatentable:

Appellants contend that the preamble of claim 1 recites a “system” and thus is a statutory “machine” under § 101. We disagree. Even assuming that claim 1 is directed to the “machine” category in § 101, this does not end the patent-eligibility analysis. Claim 1 must be construed in its entirety. That is, as previously discussed, the ***claim’s body recites nothing more than data structures and software***, and the claim’s preamble (i.e., “[a] computer system for controlling access to certain files by processes”) only serves to limit the claim by describing the invention’s intended use.

*Choo*, 2010 WL 2985362, \*3 (emphasis added) (citations omitted).

The rationale from *Venkata*, *Dettinger* and *Choo* is equally applicable here and demonstrates that Edge’s system claims are not machines nor are they patentable. Edge’s system claims reside solely in software, as the patents expressly state. *See, e.g.*, Ex. 1 (’833 Patent), col. 7, ll. 31-33 (stating “[t]he automated trading system software [runs] in a text-based environment or a Windows or Windows-like environment.”); *see also* Ex. 2 (’629 Patent), col. 9, ll. 14-18 (stating “the automated trading system may be run on an operating system, such as VMS, DOS, or LINUX, or in a WINDOWS or similar operating system, which is more user-friendly.”) Edge’s system claims do not recite any hardware or physical structure, and conversely, include

nothing more than software and data structures, which do not fit within any category of patent eligibility under § 101, much less the machine category.

**C. Edge's System And Method Claims Should Not Be Treated Differently Under § 101, And All Claims Are Equally Invalid As Abstract Ideas**

**1. Edge's System And Method Claims Mirror One Another, And All Impermissibly Seek To Patent Electronic Trading In The Abstract**

Edge argues that its system claims are distinguishable from its method claims, contending that the claims should be treated differently under § 101. A comparison of the actual claim language, however, confirms that the claims recite the same basic steps:

Asserted '833 System Claim 1	Asserted '833 Method Claim 24
<p><b>1.</b> An automated trading system for use in an electronic exchange system network, comprising:</p> <ul style="list-style-type: none"> <li>a receiver interface that <i>receives market price information</i> for a first traded item from an exchange;</li> <li>a transaction value <i>calculator that generates a transaction value</i> for the first traded item based on price information for a second traded item related to the first traded item;</li> <li>decision logic <i>using</i> at least a portion of the <i>received market price information and the transaction value</i> to generate a decision whether to submit a response to buy or sell the first traded item; and</li> <li>an output interface for <i>outputting a request for market transaction</i> for one of the first traded item and the second traded item for transmission to the exchange in response to said decision logic.</li> </ul>	<p><b>24.</b> An automated trading method for use in an electronic exchange system network, comprising:</p> <ul style="list-style-type: none"> <li><i>receiving market price information</i> for a first traded item;</li> <li>automatically <i>calculating a transaction price</i> for the first traded item based on price information for a second traded item related to the first traded item;</li> <li><i>comparing the received market price information</i> for the first traded item <i>to the transaction price</i> for the first traded item; and</li> <li>automatically <i>generating a request for market transaction</i> for one of the first traded item and the second traded item based on the comparison of the received market price information to the transaction price.</li> </ul>
'629 Claim 1 (System Claim Relied On By Edge)	'629 Claim 27 (Method Claim Ignored by Edge)
<p><b>1.</b> An automated trading system for use in an electronic exchange system network, comprising:</p> <ul style="list-style-type: none"> <li>a receiver interface that <i>receives market price information</i> for a first traded item from an exchange;</li> <li>data reference logic that <i>outputs a transaction value</i> for the first traded item from a data structure <i>based on price information</i> for a second traded item related to the first traded item;</li> <li>decision logic <i>using</i> at least a portion of <i>the received market price information and the transaction value</i> to generate a decision whether to submit an order for the first traded item; and</li> <li>an output interface for <i>outputting a request</i> for market transaction for one of the first traded item and the second traded item for transmission to the exchange in response to said decision logic.</li> </ul>	<p><b>27.</b> An automated trading method for use in an electronic exchange system network, comprising:</p> <ul style="list-style-type: none"> <li>using equipment to perform trading of a first traded item or a second traded item related to the first traded item, including:</li> <li><i>receiving market price information</i> for the first traded item;</li> <li><i>identifying a desired price</i> for the first traded item in a look-up table <i>based on price information</i> for the second traded item;</li> <li><i>comparing the received market price information</i> for the first traded item <i>to the desired price</i> for the first traded item; and</li> <li><i>generating an order</i> for one of the first traded item and the second traded item based on the comparison of the received market price information to the desired price.</li> </ul>

As the charts above demonstrate, Edge’s system and method claims mirror one another, and all include the same steps for requesting a trade. Numerous cases have held that, under these circumstances, the system claims should be treated the same as the method claims, and any purported system limitations do not limit the claims beyond the claimed method. *See, e.g., Ex parte Atkin*, No. 2008-4352, slip. op. at 18 (B.P.A.I. Jan. 30, 2009) (Ex. 7) (system claims including “any and all structures for performing the recited functions” were “at least as broad as method claims.”); *In re Meyer*, 688 F.2d 789, 796 n.3 (C.C.P.A. 1982)<sup>3</sup> (apparatus and method claims indistinguishable and, “for purposes of section 101, such claims are not treated differently”); *In re Pardo*, 684 F.2d 912, 916 n.6 (C.C.P.A. 1982) (Claims drawn to a “general purpose data processor . . .’ are treated as indistinguishable from the method claims for purposes of section 101 . . . .”)

While Edge suggests that the preamble distinguishes its system claims (D.E. 118 at 10 n.9), several post-*Bilski* decisions refute this argument. *See, e.g., Venkata*, Slip. Op. at 8 (Ex. 11) (“[T]he nominal recitation to a “system” in the preamble does not limit the body of the claim as it only states the invention’s purpose or intended use.”); *Ex parte Fatula*, No. 2009-007432, 2010 WL 3523836, at \*3 (B.P.A.I. Sep. 8, 2010) (“[N]o true apparatus in a hardware sense is disclosed to embody the recited autonomic management apparatus in the preamble of the claims” and the phrase does not limit the claims); *Ex parte Burkhardt*, No. 2009-008220, 2010 WL 3738331, at \*4 (B.P.A.I. Sep. 22, 2010) (“The phrase ‘computer-implemented,’ suggesting at best a nominal use of a general purpose computer, imposes no meaningful limits on the scope of the claims apart from describing a field in which to conduct the process.”); *Ex parte Moore*, No. 2009-005163, 2010 WL 3903327, at \*7 (B.P.A.I. Sep. 28, 2010) (The term “network” in preamble “imposed no meaningful limits on scope of the claim.”). Edge’s system and method claims are indistinguishable, and all include the same steps for deciding whether to make a trade.

## **2. Edge’s Attempts To Recast Its Claimed Invention Are Improper, And The Claims Remain Directed To Unpatentable, Abstract Ideas**

Edge’s claims all seek to patent the abstract concept of receiving market prices and comparing desired transaction values in order to make a decision as to whether to request a trade,

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<sup>3</sup> The Court of Customs & Patent Appeals (C.C.P.A.) is the predecessor to the U.S. Court of Appeal for the Federal Circuit, and the C.C.P.A.’s decisions are binding on the Federal Circuit, unless overruled *en banc*. *South Corp. v. United States*, 690 F.2d 1368, 1370 (Fed. Cir. 1982).

with the desired values either calculated in real time ('833 patent) or identified using pre-calculated values ('629 patent), as the claim language above demonstrates. Edge nevertheless ignores the claim language and inappropriately seeks to recast its claimed invention, attempting to import numerous concepts and limitations into its claims, such as a “low-overhead design,” “fully-automated trading” and “no human intervention.” D.E. 118 at 10-11. It is, of course, impermissible to import limitations from the specification into the claims.<sup>4</sup> See, e.g., *E.I. Du Pont & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 1433 (Fed. Cir. 1988) (claims are construed in light of specification, but it is improper to import limitations from the specification into the claims). Even if, however, Edge were permitted to do so, concepts such as a “low-overhead design,” “fully-automated trading” and “no human intervention,” are as equally abstract as the basic trading steps actually recited in the claims, if not more so.<sup>5</sup> Such abstract ideas are clearly unpatentable, in light of the Supreme Court precedent addressed below.<sup>6</sup>

### **3. Edge's Attempts To Distinguish *Benson*, *Flook* and *Bilski* Are Misplaced, Underscoring The Invalidity Of Edge's Claims**

#### **a. *Benson* Is Not Distinguishable**

Edge attempts to distance itself from *Gottschalk v. Benson*, 409 U.S. 63 (1972), incorrectly contending that “[u]nlike the claims in that case, however, the asserted system claims

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<sup>4</sup> Edge incorrectly suggests that the claims must be construed before the Court rules on this motion. A patent claim may be held invalid under 35 U.S.C. § 101 without first construing that claim. See *Ultramercial, LLC v. Hulu, LLC*, 2010 WL 3360098, at \*6 (C.D. Cal. Aug. 13, 2010). (invalidating a patent under § 101 and “reject[ing] Plaintiff’s argument that this Motion [under Fed. R. Civ. P. 12(b)(6)] should not be decided before claim construction.”); *CyberSource Corp. v. Retail Decisions, Inc.*, No. 04-3268, 2009 WL 815448, at \*5–10 (N.D. Cal. Mar. 27, 2009) (“[R]uling on defendant’s section 101 motion does not require that the claims actually be construed.”) The Court need only determine whether the claims seek to patent an abstract idea, which the claims here clearly do.

<sup>5</sup> Contrary to Edge’s contention, Edge’s claims here do not preclude “automated” trades where human traders remain involved in the decision-making process. For example, while asserted claim 24 of the '833 patent recites steps of “automatically calculating” and “automatically generating a request” for a trade, the step of “comparing” the received market prices to the calculated transaction value need not be automatic and can apparently be performed by a trader. Dependent claim 22 of the '629 patent expressly contemplates that a trader “monitor” the trades through a user interface, such as a computer display.

<sup>6</sup> Edge accuses Barclays and UBS of taking “the nonsensical position that a patent that claims automating a process done by humans is *per se* unpatentable,” citing a number of purported examples of “patentable machines that replaced human activities.” D.E. 118 at 8 n.7. None of these patents, however, claimed any idea in the abstract, and instead, each expressly recited *physical components* of particular machines in its claims, unlike here. See U.S. Patent No. 257,444 (Ex. 12) (steam tractor claim reciting “traction wheels,” “tank-supporting bars,” “boiler” and “smoke-stack”; U.S. Patent No. 174,465 (Ex. 13) (Bell telephone claims reciting “permanent magnet,” “circuit” and “conducting wire”); U.S. Patent No. 355,139 (Ex. 14) (dishwasher claims reciting “receptacles,” “tanks,” and “movable bottom cover”).

of the patents-in-suit are directed to specific and concrete implementations, not all implementations of automated trading or the algorithms employed.” D.E. 118 at 11. One of the claims in *Benson*, however, expressly required the use of specific hardware components (*i.e.*, “reentrant shift registers”), in order to carry out the claimed method:

The method of converting signals from binary coded decimal form into binary which comprises the steps of

- (1) storing the binary coded decimal signals in a reentrant *shift register*,
- (2) shifting the signals to the right by at least three places, until there is a binary '1' in the second position of *said register*,
- (3) masking out said binary '1' in said second position of *said register*,
- (4) adding a binary '1' to the first position of *said register*,
- (5) shifting the signals to the left by two positions,
- (6) adding a '1' to said first position, and
- (7) shifting the signals to the right by at least three positions in preparation for a succeeding binary '1' in the second position of *said register*.

*Benson*, 409 U.S. at 73-74.<sup>7</sup> The Supreme Court correctly observed that these limitations did not specify a particular machine or implementation, and instead, concluded that the method could be performed on any “general-purpose digital computer.” *Id.* at 65. The Supreme Court went on to hold that the claimed method had “no substantial practical application except in connection with a digital computer” and, in effect, would preempt all uses of the claimed method, making it unpatentable. *Id.* at 71-72.

Despite Edge’s arguments, its system claims here are not directed to a specific and concrete implementation and instead are less specific and concrete than the claims in *Benson*. The *Benson* claim plainly required hardware components, while Edge’s system claims merely recite features residing solely in software. Edge’s patents also make clear that its claimed invention does not require any particular equipment and runs on a *general purpose computer*. See, e.g., Ex. 1 (’833 Patent), col. 8, ll. 60-64 (“[T]heoretical price logic may be implemented by the central processor and memory, and possible other equipment useful in performing mathematical calculations, in a general purpose computer.”). Instead of requiring any specific implementation, the purported novelty of Edge’s claims merely lies in Edge’s attempt to speed up the process of comparing market prices to desired transaction values, in deciding whether to request a trade. *Id.*, col. 11, ll. 43-45; col. 15, ll. 15-17 (stating that any computer, circa 2000,

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<sup>7</sup> See Gregory A. Stobbs, BUSINESS METHOD PATENTS, at 47-48 (Kluwer 2002) (Ex. 15) (“A reentrant shift register is a hardware structure found within computers of Benson’s day. In general, registers are hardware memory circuits in which data are stored.”)

using a “Pentium III 450 MHz CPU and 128 MB of RAM,” is not only sufficient to practice the claimed invention, but is also capable of reaching the desired speeds). As in *Benson*, Edge’s claimed steps have no substantial practical application except in connection with a general purpose computer, and if permitted to stand, would preempt all uses of the claimed method. That is impermissible under *Benson*, and Edge’s claims are unpatentable and invalid.

**b. *Flook* Is Not Distinguishable**

Edge also attempts without success to distinguish its claims from those in *Parker v. Flook*, 437 U.S. 584 (1978). Edge correctly notes that the Supreme Court in *Flook* “held that ‘a new and presumably better method of calculating alarm limit values’ was unpatentable, ‘not because it contains a mathematical algorithm as one component, but because once that algorithm is assumed to be within the prior art, the application, considered as a whole, contains no patentable invention.’” D.E. 118 at 11 (quoting *Flook*, 437 U.S. at 594-95). Edge, however, argues that “the *Flook* principle does not apply” as its claims “are not improvements to trading algorithms, mathematical formulas, or trading concepts, but rather are inventive improvements to the physical design and architecture of the automated trading systems themselves.” *Id.* at 12. Yet, this is false, because Edge’s claims are not directed to any physical design or architecture. Instead, both patents merely claim receiving market prices and comparing desired transaction values in order to make a decision as to whether to request a trade, with the desired values either calculated in real time (’833 patent) or identified from pre-calculated values (’629 patent), using well-known algorithms, such as the Black-Scholes, Cox-Rubenstein, Garman-Kohlhagen, and Implicit Finite Difference mathematical models, as traders and trading systems have done for decades. *See, e.g.*, Ex. 1, (’833 Patent), col. 11, l. 28 – col. 13, l. 31.

As in *Flook*, Edge has merely sought to claim “a [purportedly] new and presumably better method” for making decisions for requesting a trade, and once the underlying algorithms are “assumed to be within the prior art, the [claimed invention], considered as a whole, contains no patentable invention.” *Flook*, 437 U.S. at 594. Not only is *Flook* absolutely applicable here, it confirms that Edge’s claims are unpatentable and invalid.

**c. *Bilski* Is Not Distinguishable**

Edge attempts to distinguish its claims from those in *Bilski*, arguing that “the applicant in *Bilski* attempted to patent the pure mental process and mathematical formula associated with the basic concept of hedging” and that the *Bilski* claims “were entirely divorced from anything

technical.”<sup>8</sup> D.E. 118 at 12. Edge goes on to incorrectly contend that its “asserted system claims are fundamentally different” and “are primarily focused on physical improvements to automated trading systems through, *inter alia*, a low-overhead design.” *Id.* However, none of Edge’s claims require, much less suggest, a “low-overhead design,” and that language does not appear in any of the claims. Instead, the claims recite the same mental steps that have been performed by traders for years, such as receiving market prices and comparing those prices to desired trade values in order to make a decision as to whether to request a trade, with the desired values either calculated in real time (’833 patent) or pre-calculated in advance (’629 patent). These steps are divorced from anything technical, do not require any particular machine, and merely seek to patent a well-known concept (*i.e.*, trading) in the abstract, as was the case in *Bilski*. *Bilski* confirms that Edge’s claims are unpatentable and invalid.

#### **4. Edge’s Dependent System Claims Are Equally Abstract And Do Not Convert Its Claimed Invention Into Patentable Subject Matter**

Edge erroneously contends that its “dependent system claims [*i.e.*, claims 21, 22 and 26 of the ’629 patent and claims 21 and 22 the ’833 patent] claim additional system improvements to increase speed and efficiency, and further distinguish their systems over the prior art, through the strategic placement and segregation of system elements.” D.E. 118 at 13. These dependent claims, however, do not include any limitations concerning “speed and efficiency” and merely add limitations that are insufficient to render Edge’s claimed invention patentable.

For example, claim 21 of the ’629 patent simply specifies that the “backend computer includes said receiver interface, said data reference logic, said decision logic, and said output interface,” with the “backend computer operat[ing] using a text-based operating system.” These limitations merely confirm that all of Edge’s purported structure is within a general purpose computer and resides on software that runs on a text-based operating system, as the claim language itself requires. Such software limitations mean this claim is as equally unpatentable as Edge’s other claims. *See, e.g., Fellenstein*, 2010 WL 2985341, \*2 (“A claim that recites no more than software, logic or a data structure (*i.e.*, an abstraction) does not fall within any statutory category”); *Birger*, 2010 WL 2800803, \*2 (same); *Proudler*, 2010 WL 2727840, \*2 (same).

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<sup>8</sup> In *Bilski*, the patent application at issue claimed a procedure for instructing buyers and sellers of commodities how to protect, or hedge, against the risk of price fluctuations. *Bilski*, 130 S. Ct. at 3223. Some of the claims sought to patent the general concept of hedging against risk, while others sought to patent the application of that concept to energy markets, as a specific field of use. *Id.* at 3229.



Claim 22 of the '629 patent requires a “trader station separate from said backend computer” with the “trader station including a graphic user interface to enable a trader to monitor the operation of the backend computer.” While Edge argues throughout its opposition that its claims do not cover human interaction (*see, e.g.*, D.E. 118 at 4 *et seq.*), this claim expressly contemplates a trader observing the claimed method through a graphic user interface, such as a computer display. Post-solution activities, such as observing or monitoring trading activities on a computer display, do not convert Edge’s claims into patentable subject matter, as *Flook* confirms. *Flook*, 437 U.S. at 590 (“postsolution [sic] activity” is insufficient to render an unpatentable process patentable, as “[a] competent draftsman could attach some form of postsolution [sic] activity to almost any [claim].”); *see also Ex parte Barnes*, No. 2007-4114, 2009 WL 164074, \* (B.P.A.I. Jan. 22, 2009) (“displaying of data” is “‘insignificant postsolution [sic] activity’ and as such will not transform the claimed method into a patentable method.”).

Claim 26 of the '629 patent depends on claim 22 and further requires that the “backend computer be located substantially closer than the trader station to the exchange that transmits the market price information.” While Edge argues that the placement of the trader station and backend computer somehow support the patentability of its dependent claims, Edge admits that, for all of its dependent claims, “the fully automated and low-overhead portion is at least the ‘*backend computer*’ because it *contains the relevant automated trading elements* (i.e., the ‘receiver interface,’ the ‘data reference logic’ or ‘transaction value calculator,’ the ‘decision logic’ and the ‘output interface’)”—expressly acknowledging that (i) the backend computer is all that is needed to practice the claimed trading method and (ii) the trader station used to observe and monitor trading activities is merely an insignificant post-solution activity. D.E. 118 at 5 (emphasis added). Edge’s dependent system claims are as equally unpatentable and invalid as its other claims, and its arguments to the contrary are unavailing.<sup>9</sup>

Edge nevertheless attempts to support its argument by citing *Ex parte Wasynczuk*, No. 2008-1496, 2008 WL 2262377 (B.P.A.I. Jun. 2, 2008), which is a pre-*Bilski* decision from the Patent Office. *Wasynczuk* does not, however, support Edge’s position; it undermines it. In *Wasynczuk*, the claimed invention related to a “computer-implemented system” for “simulating operation of a physical system” over “a distributed computer network.” *Wasynczuk*, 2008 WL

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<sup>9</sup> Dependent claims 21 and 22 of the '833 patent include the same limitations as claims 21, 22 and 26 of the '629 patent and are unpatentable and invalid for the same reasons.

2262377 at \*1. The Patent Office held that the “system” claims were unpatentable for the following reasons:

[W]e do not find a particular machine being recited in claim 1. Instead, the sole structural limitation recited is the “computer-implemented system” of the preamble of claim 1. As Appellants have set forth by example, the claimed computer is not any particular apparatus. Rather, we find that the computer or processor is essentially any conventional apparatus that performs the claimed functions. Thus, we conclude the system of claims 1-8, 29, and 31-33 cover (“preempt”) every substantial practical application of the abstract idea. We conclude that these claims are so broad that they are directed to the “abstract idea” itself, rather than any practical implementation of the concept.

*Wasynczuk*, 2008 WL 2262377 at \*12.<sup>10</sup> This is precisely what Edge seeks to do here, relying on a conventional general purpose computer to perform the claimed functions. Edge’s dependent claims are as equally unpatentable and invalid as its other claims.

#### **5. The Patent Office Issued Edge’s System Claims Using An Overruled Standard And Would Not Approve Of Them Today, Contrary To Edge’s Misleading Suggestion**

Edge misleadingly suggests that its system claims must be patentable because the Patent Office never rejected them under § 101. D.E. 118 at 12 (“Here, it should also be remembered that the U.S.P.T.O never leveled a § 101 challenge against any of the system claims during prosecution, even though the U.S.P.T.O. had eight years to do so for the ’629 patent and six years to do so for the ’833 patent.”). Of course, the Patent Office did not have the benefit of the *Bilski* decision and was handcuffed by an overly-forgiving patentability standard, which has now

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<sup>10</sup> While the Patent Office in *Wasynczuk* did hold certain method claims patentable, the Patent Office’s reasoning on those claims is inapposite, as those claims were patentable because the claims expressly required a “first physical computing device” and “second physical computing device,” which ***together were required to perform the claimed functions***. Here, the entirety of Edge’s automated trading functions is performed within the “backend computer,” which “contains the relevant automated trading elements,” as Edge admits. D.E. 118 at 5. Conversely, none of the claimed trading functions are performed by the trader station, which merely serves as a post-solution display device that is insufficient to convert Edge’s claims into patentable subject matter. “To hold otherwise would allow a competent draftsman to evade the recognized limitations on the type of subject matter eligible for patent protection.” *Wasynczuk*, 2008 WL 2262377 at \*7 (quoting *Diehr*, 450 U.S. at 191-92). Not surprisingly, other courts have similarly concluded that recitation of general purpose components, configured in separate locations, is insufficient to convert an unpatentable claim into a patentable one. See, e.g., *Dealer Track, Inc. v. Huber*, 657 F. Supp.2d 1152, 1155–56 (C.D. Cal. 2009) (invalidating under § 101 claims requiring a “central processor ‘consisting of a specially programmed computer hardware and database,’” “remote application entry and display device,” and a “remote funding source terminal device.”).

been expressly overruled.<sup>11</sup> Edge's claims are unpatentable and should be held invalid.

#### 6. Edge's Method Claims Are Not "Tethered To Inherently-Claimed" Particular Machines, Contrary To Edge's Argument

After spending virtually all of its opposition on its system claims, Edge turns to its method claims, disingenuously arguing that its method claims "do not claim an abstract idea, because they are executed by inherently-claimed, particular machines and machine elements that improve the speed and response time of prior art automated trading methods through reduced or limited overhead" and thus "are tethered to inherently-claimed particular and inventive machines." D.E. 118 at 14. There is, however, no support for Edge's "tethering" argument, as the method claims, by definition, recite purely functional steps for performing a method, and Edge cannot credibly argue otherwise. If anything, Edge's method claims are more abstract than the claims found to be unpatentable in other cases, such as *Benson*, where the claimed method was unpatentable even though it expressly required hardware components such as "reentrant shift registers." *Benson*, 409 U.S. at 73-74. In contrast, the method claims here merely recite basic steps for deciding whether to make a trade based on a comparison of market prices and desired values, without any structure at all. There is nothing in the claims that tethers the method to a particular machine, much less any machine.<sup>12</sup> Thus, Edge's method claims are invalid.<sup>13</sup>

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<sup>11</sup> All of the claims at issue here were issued under the formerly-applicable "useful, concrete and tangible result" test from *State Street Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998). Since then, the test has been expressly overruled by the Federal Circuit in *In re Bilski*, 545 F.3d 943, 959-60 & n.19 (Fed. Cir. 2008) (emphasis added) (stating "the 'useful, concrete and tangible result' inquiry is inadequate . . . [and this] analysis *should no longer be relied on.*")), and the Supreme Court agreed, holding that "nothing in today's opinion should be read as endorsing interpretations of § 101 that the Court of Appeals for the Federal Circuit has used in the past," specifically citing *State Street* as an example. *Bilski*, 130 S. Ct. at 3231.

<sup>12</sup> There are no particular machines disclosed in the specification to which the claims could be tethered. The patents make clear that the claimed method does not require any particular equipment and runs on any *general purpose computer*, circa 2000. See, e.g., Ex. 1 ('833 Patent), col. 8, ll. 60-64 ("a general purpose computer."); col. 7, ll. 31-33 ("[t]he automated trading system *software* [running] in a text-based environment or a Windows or Windows-like environment."); col. 11, ll. 43-45; col. 15, ll. 15-17 (stating that any computer, circa 2000, using a "Pentium III 450 MHz CPU and 128 MB of RAM," is not only sufficient to practice the claimed invention, but is also capable of reaching the desired speeds)

<sup>13</sup> Edge cites the Patent Office's *post-Bilski* interim guidelines for examining patent applications, incorrectly contending that these guideline support the patentability of its method claims. D.E. 118 at 14 n.16. The guidelines, however, make clear that the failure to incorporate a particular machine into the claimed method "weighs against eligibility," focusing on the "degree to which the machine *in the claim* can be specifically identified (not any and all machines)." Ex. 4 at 43925 (emphasis added). Here, there is no machine at all in the method claims, leaving them clearly unpatentable and invalid.

**D. Edge Inappropriately Dismisses The Machine-Or-Transformation Test, Which Confirms The Invalidity Of Edge's Claims**

Despite urging throughout its opposition that its claims require a particular machine, Edge nevertheless attempts to dismiss the applicability of the machine-or-transformation test. Edge merely notes that the test was rejected as the sole test for patentability by the Supreme Court (D.E. 118 at 8, 13), without mentioning that the Supreme Court endorsed the continued use of this test. *Bilski*, 130 S. Ct. at 3227 (The test provides a “useful and important clue, [as] an investigative tool” for patent eligibility determinations). Edge all but ignores the transformation prong of the test, and Barclays and UBS's arguments, relegating its discussion of the prong to a footnote.<sup>14</sup> D.E. 118 at 14 n.15. Edge cannot credibly argue that its claims transform any physical article or object into another state or thing, as the claims merely compare market prices to desired values in deciding to make a trade. *In re Bilski*, 545 F.3d at 964 (no transformation of any physical object or substance); *Ex parte Hindman*, No. 2009-010729, 2009 WL 4004984, at \*4 (B.P.A.I. Nov. 18, 2009) (no transformation where interactive wagering system merely used input data to determine the effect of wagers on pari-mutuel pools and thereby decide whether to place a wager). Edge's claims clearly fail this test and are invalid.

**III. EDGE CONCEDES THAT ITS INDIRECT INFRINGEMENT CLAIMS ARE WITHDRAWN, REQUIRING DISMISSAL OR AMENDMENT**

Edge previously admitted that its indirect infringement claims are baseless. D.E. 87 at 6. In its opposition, Edge again concedes that the claims have been “withdrawn.” D.E. 118 at 14. Therefore, if the Court does not dismiss the Amended Complaint, Barclays and UBS request that these claims should be dismissed, or alternatively, removed by amendment.<sup>15</sup>

**IV. CONCLUSION**

For the foregoing reasons, Barclays and UBS respectfully request that the Court grant their motion to dismiss the Amended Complaint.

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<sup>14</sup> While Edge also states in a footnote that its claims “squarely meet” the machine prong of the test “for the same reasons discussed in this Brief,” D.E. 9 n.8, Edge similarly fails to address any of the arguments raised in Barclays and UBS's opening brief on the machine prong of the test. D.E. 110 at 10-13 (Barclays and UBS arguments). As explained herein, Edge's claims do not recite and clearly are not tied to any particular machine, as required under the machine prong. *See, e.g.*, sections II.B.2 and II.C.6, *supra*.

<sup>15</sup> If the Amended Complaint is not dismissed, given the compelling justifications for bifurcation, Barclays and UBS respectfully reserve their right to seek bifurcation and have all patent invalidity and unenforceability issues heard before any proceedings on alleged infringement and damages. *See* D.E. 37 at 9-11.

Respectfully submitted,

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By: /s/ Jeffrey G. Randall  
Jeffrey G. Randall (admitted *pro hac vice*)  
PAUL, HASTINGS, JANOFSKY & WALKER LLP  
1117 S. California Avenue  
Palo Alto, CA 94304-1106  
Tel: (650) 320-1800

Allan M. Soobert (admitted *pro hac vice*)  
PAUL, HASTINGS, JANOFSKY & WALKER LLP  
875 15th Street, N.W.  
Washington, DC 20005  
Tel: (202) 551-1700

Emily Newhouse Dillingham  
PAUL, HASTINGS, JANOFSKY & WALKER LLP  
191 N. Wacker Drive  
Chicago, IL 60606  
Tel: (312) 499 6292

*Attorneys for Defendants Barclays Bank PLC, Barclays  
Capital Inc., UBS AG, UBS Financial Services, Inc., and  
UBS Securities, L.L.C.*

**CERTIFICATE OF SERVICE**

I, Jeffrey G. Randall, hereby certify that on October 22, 2010, I caused a true and correct copy of the foregoing Reply Memorandum in Support of the Barclays and UBS Defendants' Renewed Motion to Dismiss the Amended Complaint to be served by electronic filing using the CM/ECF system upon:

Sang A. Young Brodie  
[sybrodie@rkmc.com](mailto:sybrodie@rkmc.com), [mjlanson@rkmc.com](mailto:mjlanson@rkmc.com), [mmtacheney@rkmc.com](mailto:mmtacheney@rkmc.com)

Patrick G. Burns  
[pburns@gbclaw.net](mailto:pburns@gbclaw.net), [docket@gbclaw.net](mailto:docket@gbclaw.net)

Glenna Lynn Gilbert  
[glgilbert@rkmc.com](mailto:glgilbert@rkmc.com), [dmlafrance@rkmc.com](mailto:dmlafrance@rkmc.com)

Munir R. Meghjee  
[rmeghjee@rkmc.com](mailto:mrmeghjee@rkmc.com), [ljlewis@rkmc.com](mailto:ljlewis@rkmc.com), [jkcornelius@rkmc.com](mailto:jkcornelius@rkmc.com)

Ronald Schutz  
[rjschutz@rkmc.com](mailto:rjschutz@rkmc.com)

Robert W. Unikel  
[Robert.unikel@kayescholer.com](mailto:Robert.unikel@kayescholer.com); [maondil@kayescholer.com](mailto:maondil@kayescholer.com)

Deanna Keysor  
[deanna.keysor@kayescholer.com](mailto:deanna.keysor@kayescholer.com)

Michelle K. Marek  
[michelle.marek@kayescholer.com](mailto:michelle.marek@kayescholer.com)

Jeana R. Lervick  
[jlervick@gbclaw.net](mailto:jlervick@gbclaw.net); [docket@gbclaw.net](mailto:docket@gbclaw.net)

Gavin James OKeefe  
[gokeefe@gbclaw.net](mailto:gokeefe@gbclaw.net)

By: /s/ Jeffrey G. Randall